Selected Abstracts from the March Issue of the European Journal of Vascular and Endovascular Surgery

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15 Year Experience of Carotid Endarterectomy at the Royal Brisbane and Women's Hospital: Outcomes and Changing Trends in Management

Organ N., Walker P.J., Jenkins J., Foster W., Jenkins J. Eur J Vasc Endovasc Surg 2007;xx:xx-xx.

Objective: The aim of this study was to review the results of carotid endarterectomy (CEA) at the Royal Brisbane and Women's Hospital (RBWH) to provide a benchmark for comparison with carotid stenting and to document changes in imaging and procedural techniques over time.

Methods: Analysis of RBWH CEA database from 1992 to 2007.

Results: 1313 consecutive patients (average age 69.2 years, 9% 80 years or older, 69% males) underwent carotid endarterectomy at the RBWH between 1992 and May 2007. Indication for surgery was symptomatic disease in 67%. Preoperative investigations included a duplex scan in 97%, an angiogram in 24% and a CT brain in 33%. Angiogram related neurological events occurred in 3.5% of patients (1.6% stroke, 1.9% TIA). There were 7 deaths (0.5%) and 28 strokes (2.1%) for a combined stroke and death rate of 2.4%. The rate of transient ischemic attacks was 1.1%. Gender patch use and trainees operating with the surgeon unscrubbed predicted a higher combined stroke and death rate. Trends over time included: reduction in preoperative angiography from 66% to <5% and increased rate of patching from 39% to approximately 100%.

Conclusions: Performance of CEA at the RBWH is in keeping with published literature standards. There has been an evolution to surgery performed on the basis of duplex ultrasound alone and an almost universal use of patching.

Are Adverse Events after Carotid Endarterectomy Reported Comparable in Different Registries?

Taha A.G., Vikatmaa P., Albäck A., Aho P.S., Railo M., Lepäntalo M. Eur J Vasc Endovasc Surg 2007;xx:xx-xx.

Objectives: To assess the extent of discrepancies between different vascular registries, at various levels of validation, and to investigate whether such differences might alter the morbidity and mortality rates obtained from the gold standard dataset for carotid endarterectomy (CEA).

Methods: All CEA operations in Helsinki University Central Hospital from 2000–2005 were retrieved from the local vascular registry (HUSVASC) and the Hospital Discharge Registry (HILMO). Both registries were validated at different levels to form the final dataset. Total and indication-specific perioperative morbidity and mortality rates were estimated from each level of validation and compared with those from the final dataset and with pooled rates from systematic reviews.

Results: Initial search provided 675 and 681 CEAs from HUSVASC and HILMO, respectively, decreasing to 636 (94%) and 614 (90%) when using the specific operative codes for thrombendarterectomy and patch angioplasty. Manual verification of initial HUSVASC results proved that 655 (97%) operations were true CEAs. 18 further proven CEAs, registered only in HILMO, were added to form the final CEA dataset ($n = 673$). The peri-operative morbidity and combined morbidity and mortality rates were 2.23% and 2.67%, respectively. Comparable rates were obtained from both registries, irrespective the level of verification.

Conclusion: Registry data do not appear to be biased by random loss of some operations and thus they are reliable for decision-making. However, further research is still needed to estimate the permissible volume of omissions in a registry for the data-base to remain trustworthy.

Elective Abdominal Aortic Aneurysm Repair: Does the Aneurysm Diameter Influence Long-Term Survival?

Sahal M., Prusa A.M., Wibmer A., Wolff K.S., Lammer J., Polterauer P., Kretschmer G., Teufelsbauer H. Eur J Vasc Endovasc Surg 2007;xx:xx-xx.

Objectives: The aim of this study was to investigate whether initial abdominal aortic aneurysm (AAA) diameter influences long-term survival after elective repair.

Design: Retrospective analysis of database.

Material and Methods: Between March 1995 and December 2006, a consecutive series of 895 patients underwent elective treatment of an AAA either by open surgical or endovascular repair. An AAA diameter of 5.5 cm was chosen as threshold to distinguish between small and large aneurysms, according to the definition given by the UK small aneurysm trial. Patient characteristics and distribution of basic risk factors were assessed. Survival estimates (Kaplan-Meier) and Cox proportional hazards regression results are reported.

Results: Patients with small aneurysms were more likely to survive the first 6 years after AAA repair, even after adjustment for treatment modality and baseline risk factors. After adjustment for age and sex aneurysms with smaller diameter were related to a lower risk of death ($p < 0.0016$).

Conclusions: Patients with small aneurysms (≤5.5 cm) have an improved long-term survival than patients with larger aneurysms.

Interobserver and Intraobserver Variability of Interpretation of CT-angiography in Patients with a Suspected Abdominal Aortic Aneurysm Rupture

Hoornweg L.L., Wisselink W., Vahl A.C., Reekers J.A., van Delden O.M., Legemate D.A., Balm R. Eur J Vasc Endovasc Surg 2007;xx:xx-xx.

Purpose: To assess interobserver and intraobserver agreement on presence of rupture and determining suitability for endovascular repair (EVAR) on CT angiography (CTA) of patients with a suspected ruptured abdominal aortic aneurysm (RAAA).

Methods: For the Amsterdam Acute Aneurysm study, a randomised multicenter trial (ISRCTN66212637), we register all patients with suspected RAAA in the Amsterdam region. For the current analysis 51 consecutive patients were included from this prospective database. Pre operative CT scans were assessed twice with a six-week interval by three vascular surgeons and two interventional radiologists. Variables recorded were presence of rupture, diameter and length of the infrarenal aortic neck, diameters of both iliac arteries and final judgement on anatomical suitability for EVAR. Kappa values for dichotomous outcomes were calculated as a measure of agreement above chance. Continuous outcomes were investigated by calculating the intraclass correlation coefficient (ICC) and by Bland-Altman plots.

Results: For presence of rupture group kappa was 0.59 (CI: 0.42–0.77). The group kappa of suitability for EVAR was 0.38 (CI: 0.24–0.51). The ICC for diameter and length of the infrarenal aortic neck and diameters of left and right iliac arteries were 0.40 (CI: 0.26–0.56), 0.47 (CI: 0.32–0.62), 0.61 (CI: 0.48–0.74) and 0.35 (CI: 0.21–0.50) respectively. The Bland-Altman plots confirmed the large variation among observers.

Intraobserver kappa ranged from 0.57–0.78 for presence of rupture and 0.40–0.80 for suitability for EVAR.

Conclusion: Moderate interobserver agreement was found for presence of rupture and fair agreement for suitability for EVAR. Intraobserver agreement ranged from moderate to almost perfect. Based on this data, optimization of the protocol is mandatory to identify uniform measuring techniques of well defined anatomical criteria for endovascular repair of ruptured aneurysms.

Infected Upper Extremity Aneurysms: A Review

Leon L.R., Psalms S.B., Labropoulos N., Mills J.L. Eur J Vasc Endovasc Surg 2007;xx:xx-xx.

Objectives: To review the occurrence of mycotic aneurysm affecting upper extremity arteries.

Design: Literature review.

Materials and methods: A MEDLINE search from 1950 until 2007 and an extensive manual search were carried out using bibliographies from relevant published papers including cases involving arteries distal to the subclavian.

Results: A total of 149 cases (68 papers) were identified. The brachial artery was the most frequently reported site, mostly associated with drug abuse, catheterization procedures or endocarditis. Since 1950 arterial trauma (drug abuse or catheterization) was the commonest cause. Gram positive organisms were the most frequent microbes involved. Acknowledging a limited follow-up, most patients did well when surgical therapy was promptly instituted.

Conclusions: Infected upper extremity aneurysms have been rarely described. IV drug abusers are a unique high-risk group for mycotic aneurysms in the upper extremities, most importantly in the axillary and brachial arteries. When rapidly performed, arterial ligation, primary repair or reconstruction with autogenous conduits was associated with favorable outcomes.